IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re PATENT APPLICATION of:

NAGAO, T. *et al.*

Application Serial No: 09/512,276

Filed: February 24, 2000

Title: GLASS BASE MATERIAL PACKING METHOD

Group Art Unit: 3721

Examiner: TRAN, L.B.

BRIEF ON APPEAL

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A. INTRODUCTION

This Appeal is from an official action mailed February 21, 2003 finally rejecting claims 2 to 6, 8, and 34 of the previously identified application followed by an Advisory Action mailed May 30, 2003, affirming the claim rejections.

1. Real Party in Interest

The real party of interest for this Appeal and the present application is Shin-Etsu Chemical, Co., as evidenced by the assignment recorded at the United States Patent and Trademark Office on May 26, 2000 on Reel 010823, Frame 0121.

2. Related Appeals and Interferences

The appellant, appellant's legal representatives, or the assignee are not aware of any related appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

3. Status of Claims

Claims 2-16 and 34 are pending of which claims 2 to 6, 8, and 34 stand rejected, and are on appeal. Claims 17-33 were withdrawn and claim 1 was canceled. The claims on appeal are set forth in the attached Appendix. Claims 2 and 3 are independent; claims 4 to 6, 9, and 10 individually depend from claim 2; claims 7 and 8 individually depend from claim 6; claim 12 individually depends from claim 11; claims 13, 14, and 16 individually depend from claim 12; claim 15 individually depends from claim 13; and claim 34 depends from claims 2 and 3. The appellants note that claim 11 depends from canceled claim 1. Upon indication of the allowance of claim 2, the appellants shall amend claim 11 to depend from claim 2.

4. Status of Amendments

Subsequent to the final rejection an amendment was submitted on May 9, 2003, in which claims 2 and 3 were amended. This amendment was entered as indicated in the Advisory Action of May 30, 2003, which also affirmed the outstanding claim rejections.

B. SUMMARY OF THE INVENTION

1. Related Art Problems Overcome by the Invention

Quartz glass or quartz glass base material is used as a base material from which optical fibers are drawn. Cracks in the surface of the glass base material cause the fibers to

be cut during the drawing process. Therefore, it is important to minimize flaws in the glass base material.

Glass base material is generally shipped in the form of rods of a pre-elongated length. Shipping multiple rods in one container increases the opportunity for damage as the individual rods may come in contact with each other. Conventional methods for packing glass base material use large amounts of buffer material between the individual pieces to minimize movement and damage. Not only is this economically unfavorable, but it also requires a large amount of labor and time.

The present invention provides a method for packing glass base materials that overcomes the problems in the conventional methods of packing (page 1, line 17 to page 3, line 13).

2. Object of the Invention

It is an object of the invention to provide a packing method for glass base materials which overcomes the issues noted above in the related art. One aspect of the invention is a packing method comprising putting the glass base material having a cylindrical shape into a plastic bag and packing it into a cylindrical container rigid enough to withstand a load from the glass base material.

Another aspect of the invention is a packing method comprising rolling up the glass base material having a cylindrical shape with air packing material and packing it into a cylindrical container, which container is rigid enough to withstand a load from the glass base material (page 4, lines 16 to 22; page 5, lines 1 to 6).

3. The Claimed Invention

a) Claim 2

Independent claim 2 is directed to a method of packing a glass base material of an optical fiber, comprising putting the glass base material having a cylindrical shape over its whole length into a plastic bag and packing the glass base material into a cylindrical container rigid enough to withstand a load from the glass base material.

b) Claim 3

Independent claim 3 is directed to a method of packing a glass base material of an optical fiber, comprising rolling up the glass base material having a cylindrical shape over its whole length with air packing material containing air inside and packing the glass base

material rolled up with the air packing material into a cylindrical container rigid enough to withstand a load from the glass base material.

c) Claim 4

Additional features of the invention are found in dependent claim 4. Claim 4 is dependent on claim 3 and is directed to a method of packing a glass base material, wherein the rolling up step rolls up the glass base material, which is put into the plastic bag, with three-layers of the air packing material.

d) Claim 5

Additional features of the invention are found in dependent claim 5. Claim 5 is dependent on claim 3 and is directed to a method of packing a glass base material, wherein the packing packs the glass base material in the cylindrical container which has an inside diameter of approximately 10 mm larger than a diameter of the glass base material.

e) Claim 6

Additional features of the invention are found in dependent claim 6. Claim 6 is dependent on claim 3 and is directed to a method of packing a glass base material, wherein the packing further comprises capping both ends of the cylindrical container, which packs the glass base material, by caps.

f) Claim 7

Additional features of the invention are found in dependent claim 7. Claim 7 is dependent on claim 1 and is directed to a method of packing a glass base material, wherein the packing further comprises filling a space between an end of the glass base material and the cap with a cushion material.

g) Claim 8

Additional features of the invention are found in dependent claim 8. Claim 8 is dependent on claim 6 and is directed to a method of packing a glass base material, wherein the packing further comprises providing an inside cap, which has a shape that can fit with a shape of end of the glass base material, on a space between the end of the glass base material and the cap.

h) Claim 9

Additional features of the invention are found in dependent claim 9. Claim 9 is dependent on claim 3 and is directed to a method of packing a glass base material, further

comprising packing a plurality of the cylindrical containers, each of which is packed with the glass base material, into a cylindrical container.

i) Claim 10

Additional features of the invention are found in dependent claim 10. Claim 10 is dependent on claim 3 and is directed to a method of packing a glass base material, further comprising packing a plurality of the cylindrical containers, each of which is packed with the glass base material, into a square-shaped box.

j) Claim 11

Additional features of the invention are found in dependent claim 11. Claim 11 is dependent on claim 1 and is directed to a method of packing a glass base material, wherein the packing packs a plurality of the glass base materials into the cylindrical container.

k) Claim 12

Additional features of the invention are found in dependent claim 12. Claim 12 is dependent on claim 11 and is directed to a method of packing a glass base material, wherein the packing comprises putting each of the plurality of glass base materials into individual plastic bags and packing the plurality of the glass base materials, each of which are put into the each of individual plastic bags, into the cylindrical container.

l) Claim 13

Additional features of the invention are found in dependent claim 13. Claim 13 is dependent on claim 12 and is directed to a method of packing a glass base material, wherein the packing further comprises wrapping together the plurality of glass base materials, each of which are put into each of individual plastic bags, with air packing material, which contains air inside; and packing the plurality of the glass base materials wrapped with the air packing material into the cylindrical container.

m) Claim 14

Additional features of the invention are found in dependent claim 14. Claim 14 is dependent on claim 12 and is directed to a method of packing a glass base material, wherein the packing further comprises wrapping each of the plurality of the glass base materials, each of which are put into each of individual plastic bags, with each of individual air packing material, which contains air inside; wrapping together the plurality of the glass base materials, each of which are wrapped with each of individual air packing material, with a secondary air

packing material, which contains air inside; and packing the plurality of the glass base materials, wrapped with the secondary air packing material into the cylindrical container.

n) Claim 15

Additional features of the invention are found in dependent claim 15. Claim 15 is dependent on claim 13 and is directed to a method of packing a glass base material, wherein the packing packs the plurality of the glass base materials in the cylindrical container which has an inside diameter of approximately 10 mm larger than the total diameter of the plurality of the glass base materials.

o) Claim 16

Additional features of the invention are found in dependent claim 16. Claim 16 is dependent on claim 12 and is directed to a method of packing a glass base material, wherein the packing comprises putting seven pieces of the glass base materials into individual plastic bags; bundling together the seven pieces of the glass base materials, each of which are put into each of individual plastic bags, such that six pieces of the glass base materials are arranged in a hexagonal arrangement around one central glass base material; and packing the seven pieces of the glass base materials, bundled together into the cylindrical container.

p) Claim 34

Additional features of the invention are found in dependent claim 34. Claim 34 is dependent on either of claims 2 or 3 and is directed to a method of packing a glass base material, wherein the cylindrical container is made of at least one of a material selected from the group consisting of cardboard, plastic, cardboard plastic, wood, and metal.

C. REJECTIONS AND ISSUES

The final official action, dated February 21, 2003, rejected claims 2 and 34 as allegedly being unpatentable over Simon (U.S. Pat. No. 4,560,069) in view of Curry, Jr. (U.S. Pat. No. 4,267,928); claims 3 to 6 as allegedly being unpatentable over Simon in view of Curry, Jr., and in further view of Harmony (U.S. Pat. No. 4,268,567); and claim 8 as allegedly being unpatentable over Simon in view of Curry, Jr., Harmony, and in further view of Dhority *et al.* (U.S. Pat. No. 5,236,088).

Therefore, the issues on appeal are whether claims 2 and 34 are obvious over Simon in view of Curry, Jr.; whether claims 3 to 6 are obvious over Simon in view of Curry, Jr. and Harmony; and whether claim 8 is obvious over Simon in view of Curry, Jr., Harmony, and

Dhority *et al.* all under 35 U.S.C. §103. Claims 7 and 9 to 16 are not specifically addressed in the rejections. They depend from rejected claims, however, therefore their patentability is also individually addressed *infra*.

D. GROUPING OF CLAIMS

Each claim in this patent application is separately patentable and upon issuance of a patent will be entitled to a separate presumption of validity under 35 U.S.C. §282. For this appeal, however, the claims are grouped as follows:

Group I: Claims 2 and 34

Group II: Claims 3 to 16

The claims within Group I or Group II do not stand or fall together and are argued separately in the following arguments.

E. ARGUMENT

1. Rejections Under 35 U.S.C. §103(a)

Claims 2 and 34 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Simon in view of Curry, Jr. Claims 3 to 6 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Simon in view of Curry, Jr. and Harmony. Claim 8 was rejected under 35 U.S.C. §103(a) as allegedly being obvious over Simon in view of Curry, Jr., Harmony, and Dhority *et al.*

2. Claim 2 is Patentable Under 35 U.S.C. §103

Simon describes a package assembly for transporting hazardous material. In Simon, a bottle containing the hazardous material is surrounded by cut or molded foam elements and placed in a metal can (column 1, lines 19 to 23). Simon does not pack glass base material of an optical fiber having a cylindrical shape over its whole length, by putting the glass base material into a plastic bag. The bottle of Simon is neither a glass base material for optical fiber nor does it have a cylindrical shape over its whole length.

The examiner uses Curry, Jr. to attempt to overcome some of the deficiencies of Simon. Curry Jr. describes a container with a plastic liner. The plastic liner is shrunk around the walls of the container (column 1, lines 44 to 46). Curry, Jr., however, does not pack glass base material of an optical fiber having a cylindrical shape over its whole length. Furthermore, the plastic bag of the present invention is not shrunk around the container.

There is no motivation for one of ordinary skill in the art to combination Simon with Curry, Jr. as the use of a plastic liner from Curry, Jr. would be unnecessary considering that the bottle is snugly fitted within the foam of Simon (column 2, line 8). In addition, *if* Simon were combined with Curry, Jr., the combination would not teach or suggest all the claim limitations as neither reference describes glass base material.

The examiner alleges that Kawamura (JP 4092249425) provides evidence showing that "glass base material" and "glassware" (mentioned in Curry, Jr.) are interchangeable terms. This allegation is not supported by Kawamura.

Paragraph 0005 of Kawamura states that the invention is glassware characterized by making a pattern expressed with paints containing heavy metal buried in the glass base material which has transparency. In other words, the glass base material is used to form the glassware, *i.e.*, they are different entities and not interchangeable with each other. The examiner's position with respect to Kawamura is wrong.

Therefore, the appellants respectfully submit that claim 2 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and respectfully request that the Honorable Board withdraw this rejection.

3. Claim 3 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 3 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr., and Harmony for at least the following reasons.

As noted in the arguments for claim 2, Simon does not pack glass base material of an optical fiber having a cylindrical shape over its whole length, by putting the glass base material into a plastic bag. The bottle of Simon is neither a glass base material for optical fiber nor does it have a cylindrical shape over its whole length. Further, Simon does not mention use of air packing material, which would be unnecessary considering that the bottle is snugly fitted within the foam.

In Curry, Jr., air or gas is compressed, contained in a bag, and used to provide pressure against liquid contained in an adjacent bag. The function of the air is to push the liquid out of a spray nozzle. One of ordinary skill in the art would not view the compressed air of Curry, Jr. as air packing material containing air inside, as claimed in claim 3. If anything, the use of compressed air, as in Curry, Jr., would teach away from the present invention as it would either force any contents towards the ends of a container, thereby increasing the risk of damage, or be too inflexible to provide adequate cushioning. In

contrast, the function of air in the present invention is to shield the glass base material away from the ends of a container and cushion it by rolling it up with the air packing material.

Harmony describes a reusable insulator for canned drinks to reduce the rate of warming, thereby permit dawdling consumption of the liquid therein (column 1, lines 15 to 18 and lines 39 to 40). These insulators are made of polyethylene foam. The insulators of Harmony are in a different field and directed to different purpose than the air packing material of the present invention. Neither Simon, nor Curry, Jr., nor their combination would suggest, to one of ordinary skill in the art, the polyethylene foam insulators of Harmony, designed to keep liquids from getting warmed too quickly as air packing material in which solid glass base material is rolled up as in the present invention.

Not only would one of ordinary skill in the art not seek to combine Simon with Curry, Jr., and Harmony but such a combination would also not teach or suggest all the claimed features. Therefore, appellants respectfully submit that claim 3 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony and respectfully request that the Honorable Board withdraw this rejection.

4. Claim 4 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 4 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 3 and for additional limitations and features in claim 4.

None of the cited patents teach or suggest, *inter alia*, rolling up the glass base material, which is put into the plastic bag, with three-layers of the air packing material.

5. Claim 5 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 5 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 3 and for additional limitations and features in claim 5.

None of the cited patents teach or suggest, *inter alia*, the cylindrical container with an inside diameter of approximately 10 mm larger than a diameter of the glass base material.

6. Claim 6 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 6 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 3 and for additional limitations and features in claim 6.

None of the cited patents teach or suggest, *inter alia*, the packing further comprising capping both ends of the cylindrical container by caps.

7. Claim 7 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 7 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 6 and for additional limitations and features in claim 7.

None of the cited patents teach or suggest, *inter alia*, the packing further comprising filling a space between an end of the glass base material and the cap with a cushion material.

8. Claim 8 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 8 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr., Harmony, and Dhority *et al.* for at least the reasons given above for claim 6 and for additional limitations and features in claim 8.

None of the cited patents teach or suggest, *inter alia*, the packing further comprising providing an inside cap with a shape that can fit with a shape of the end of the glass base material, on a space between the end of the glass base material and the cap.

Dhority *et al.* describe a kit for handling and shipping explanted orthopedic implants and/or tissue samples (column 1, lines 7 to 10). Dhority *et al.* are in a very different field from the present invention and there would be no motivation for one of ordinary skill in the art to combine the teachings of this patent with Simon, Curry, Jr., and Harmony. Furthermore, this combination does not teach or suggest all the claim limitations, for example, packing glass base material.

9. Claim 9 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 9 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 3 and for additional limitations and features in claim 9.

None of the cited patents teach or suggest, *inter alia*, a plurality of the cylindrical containers, each of which is packed with the glass base material, into a cylindrical container.

10. Claim 10 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 10 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 3 and for additional limitations and features in claim 10.

None of the cited patents teach or suggest, *inter alia*, packing a plurality of the cylindrical containers, each of which is packed with the glass base material, into a square-shaped box.

11. Claim 11 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 11 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 2 and for additional limitations and features in claim 11.

None of the cited patents teach or suggest, *inter alia*, packing a plurality of the glass base materials into the cylindrical container.

12. Claim 12 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 12 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 11 and for additional limitations and features in claim 12.

None of the cited patents teach or suggest, *inter alia*, putting each of the plurality of glass base materials into individual plastic bags and packing them into the cylindrical container.

13. Claim 13 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 13 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 12 and for additional limitations and features in claim 13.

None of the cited patents teach or suggest, *inter alia*, wrapping together the plurality of glass base materials, each of which are put into each of individual plastic bags, with air packing material containing air; and packing the plurality of the glass base materials wrapped with the air packing material into the cylindrical container.

14. Claim 14 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 14 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 12 and for additional limitations and features in claim 14.

None of the cited patents teach or suggest, *inter alia*, wrapping each of the glass base materials in individual plastic bags, each with packing material containing air; further wrapping with a secondary air packing material, also containing air; and packing the plurality of the glass base materials, wrapped with the secondary air packing material into the cylindrical container..

15. Claim 15 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 15 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 13 and for additional limitations and features in claim 15.

None of the cited patents teach or suggest, *inter alia*, packing the glass base materials in the cylindrical container which has an inside diameter of approximately 10 mm larger than the total diameter of the glass base materials.

16. Claim 16 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 16 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. and Harmony for at least the reasons given above for claim 12 and for additional limitations and features in claim 16.

None of the cited patents teach or suggest, *inter alia*, putting seven pieces of the glass base materials into individual plastic bags; bundling them together, such that six pieces are arranged in a hexagonal arrangement around one central piece and packing the seven pieces, bundled together, into the cylindrical container.

17. Claim 34 is Patentable Under 35 U.S.C. §103

The appellants respectfully submit that claim 34 is patentable under 35 U.S.C. §103 over Simon in view of Curry, Jr. for at least the reasons given above for claim 2 and for additional limitations and features in claim 34.

None of the cited patents teach or suggest, *inter alia*, a cylindrical container made of cardboard, plastic, cardboard plastic, wood, or metal.

F. CONCLUSION

For the reasons discussed above, the appellants respectfully submit that claims 2 to 34 are not obvious over Simon in view of Curry, Jr. under 35 U.S.C. §103; claims 3 to 6 are not obvious over Simon in view of Curry, Jr., and Harmony under 35 U.S.C. §103; and claim 8 is not obvious over Simon in view of Curry, Jr., Harmony, and Dhority *et al.* under 35 U.S.C. §103(a). The appellants respectfully request the Honorable Board to reverse the rejection of these claims.

Respectfully submitted,

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G. APPENDIX

Claims 2 to 16 and 34 are pending as follows:

Claim 2. A method of packing a glass base material of an optical fiber, comprising:

putting said glass base material having a cylindrical shape over its whole length into a plastic bag; and

packing said glass base material which has been put in a plastic bag into a cylindrical container, which container is rigid enough to withstand a load from said glass base material.

Claim 3. A method of packing a glass base material of an optical fiber, comprising:

rolling up said glass base material having a cylindrical shape over its whole length with air packing material that contains air inside; and

packing said glass base material rolled up with said air packing material into a cylindrical container, which container is rigid enough to withstand a load from said glass base material.

Claim 4. A method of packing a glass base material as claimed in claim 3, wherein said rolling up step rolls up said glass base material, which is put into said plastic bag, with three-layers of said air packing material.

Claim 5. A method of packing a glass base material as claimed in claim 3, wherein said packing packs said glass base material in said cylindrical container which has an inside diameter of approximately 10 mm larger than a diameter of said glass base material.

Claim 6. A method of packing a glass base material as claimed in claim 3, wherein said packing further has:

capping both ends of said cylindrical container, which packs said glass base material, by caps.

Claim 7. A method of packing a glass base material as claimed in claim 6, wherein said packing further has:

filling space between an end of said glass base material and said cap with a cushion material.

Claim 8. A method of packing a glass base material as claimed in claim 6, wherein said packing further has:

providing an inside cap, which has a shape that can fit with a shape of end of said glass base material, on a space between said end of said glass base material and said cap.

Claim 9. A method of packing a glass base material as claimed in claim 3, further comprising:

packing a plurality of said cylindrical containers, each of which is packed with said glass base material, into a cylindrical container.

Claim 10. A method of packing a glass base material as claimed in claim 3, further comprising:

packing a plurality of said cylindrical containers, each of which is packed with said glass base material, into a square-shaped box.

Claim 11. A method of packing a glass base material as claimed in claim 1, wherein said packing packs a plurality of said glass base materials into said cylindrical container.

Claim 12. A method of packing a glass base material as claimed in claim 11, wherein said packing has:

putting each of said plurality of said glass base materials into each of individual plastic bags; and

packing said plurality of said glass base materials, each of which are put into said each of individual plastic bags, into said cylindrical container.

Claim 13. A method of packing a glass base material as claimed in claim 12, wherein said packing further has:

wrapping together said plurality of said glass base materials, each of which are put into said each of individual plastic bags, with air packing material, which contains air inside; and

packing said plurality of said glass base materials wrapped with said air packing material into said cylindrical container.

Claim 14. A method of packing a glass base material as claimed in claim 12, wherein said packing further has:

wrapping each of said plurality of said glass base materials, each of which are put into said each of individual plastic bags, with each of individual air packing material, which contains air inside; and

wrapping together said plurality of said glass base materials, each of which are wrapped with said each of individual air packing material, with a secondary air packing material, which contains air inside; and

packing said plurality of said glass base materials, wrapped with said secondary air packing material into said cylindrical container.

Claim 15. A method of packing a glass base material as claimed in claim 13, wherein said packing packs said plurality of said glass base materials in said cylindrical container which has an inside diameter of approximately 10 mm larger than total diameter of said plurality of said glass base materials.

Claim 16. A method of packing a glass base material as claimed in claim 12, wherein said packing has:

putting each of seven pieces of said glass base materials into said each of individual plastic bags; and

bundling together said seven pieces of said glass base materials, each of which are put into said each of individual plastic bags, such that six pieces of said glass base materials are arranged in a hexagonal arrangement around one central said glass base material; and

packing said seven pieces of said glass base materials, bundled together into said cylindrical container.

Claim 34. A method of packing a glass base material as claimed in claim 2 or 3, wherein said cylindrical container is made of at least one of material selected from the group consisting of cardboard, plastic, cardboard plastic, wood and metal.